

What is claimed is:

1. A motor comprising:

(a) a cylindrical frame made of ferromagnetic material;

5 (b) a pipe fitted in and disposed within said frame concentrically;

(c) a sintered bearing press-fitted into said pipe;

(d) a cylindrical magnet fixed on an outer wall of said pipe at an inner wall of said magnet; and

10 (e) a cylindrical coil facing said magnet via an annular space, wherein said frame and said pipe are welded at a fitted section therebetween.

2. The motor of claim 1, wherein the welding is one of resistance welding and laser welding.

15 3. The motor of claim 1, wherein the fitted section has a fit-in margin ranging from not less than $0\ \mu\text{m}$ to less than $20\ \mu\text{m}$.

20 4. The motor of claim 1, wherein said motor is a vibration motor.

5. A motor comprising:

(a) a cylindrical frame made of ferromagnetic material;

(b) a sintered bearing fitted in and disposed within said frame concentrically;

25 (c) a cylindrical magnet fixed on an outer wall of said sintered bearing at an inner wall of said magnet; and

(d) a cylindrical coil facing said magnet via an annular space,

wherein said frame and said sintered bearing are welded at a fitted section therebetween.

6. The motor of claim 5, wherein the welding is one of resistance welding and laser welding.

7. The motor of claim 5, wherein the fitted section has a fit-in margin ranging from not less than $0\ \mu\text{m}$ to less than $20\ \mu\text{m}$.

8. The motor of claim 5, wherein said motor is a vibration motor.

9. An apparatus comprising:

(a) a housing;

(b) a motor disposed in said housing, said motor including:

(b-1) a cylindrical frame made of ferromagnetic material;

(b-2) a pipe fitted in and disposed within said frame concentrically;

(b-3) a sintered bearing press-fitted into said pipe;

(b-4) a cylindrical magnet fixed on an outer wall of said pipe at an inner wall of said magnet; and

(b-5) a cylindrical coil facing said magnet via an annular space,

wherein said frame and said pipe are welded at a fitted section therebetween, and

(c) a mechanism for powering said motor.

10. The apparatus of claim 9, wherein the welding is one of

resistance welding and laser welding.

11. The apparatus of claim 9, wherein the fitted section has a fit-in margin ranging from not less than $0\ \mu\text{m}$ to less than $20\ \mu\text{m}$.

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12. The apparatus of claim 9, wherein said motor is a vibration motor.

13. An apparatus comprising:

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(a) a housing;

(b) a motor disposed in said housing, said motor including:

(b-1) a cylindrical frame made of ferromagnetic material;

(b-2) a sintered bearing fitted in and disposed within said frame concentrically;

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(b-3) a cylindrical magnet fixed on an outer wall of said sintered bearing at an inner wall of said magnet; and

(b-4) a cylindrical coil facing said magnet via an annular space,

wherein said frame and said sintered bearing are welded at a fitted section therebetween, and

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(c) a mechanism for powering said motor.

14. The apparatus of claim 13, wherein the welding is one of resistance welding and laser welding.

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15. The apparatus of claim 13, wherein the fitted section has a fit-in margin ranging from not less than $0\ \mu\text{m}$ to less than $20\ \mu\text{m}$.

16. The apparatus of claim 13, wherein said motor is a vibration motor.

16. The apparatus of claim 13, wherein said motor is a vibration motor.